Feels Like: Where Heat Index and Wind Chill Come From

Name: Date: Class:

Read the lesson at myweatherrock.com/journal/explainers/feels-like (or the printed copy), then answer below.

Remember

Feels like numbers model how fast your body gains or loses heat, not a second secret temperature. In heat, humidity slows the evaporation of sweat, so the heat index runs above the thermometer. In cold, wind strips away the thin warm layer your body builds, so wind chill runs below it. Both are physiology math wearing a weather costume.

Questions

1. Why does humidity raise the feels like temperature?

- ☐ A. Humid air is physically hotter
- ☐ B. Moist air slows sweat evaporation, so your body sheds heat more slowly
- ☐ C. Humidity blocks the wind

2. Wind chill describes what happening to your body?

- ☐ A. The air temperature dropping near skin
- ☐ B. Wind repeatedly stripping away the thin warm air layer your body builds
- ☐ C. Blood retreating from the skin

3. Feels like says 105. The thermometer says 90. Which is the real temperature?

- ☐ A. 105
- ☐ B. 90
- ☐ C. Both are real temperatures

4. Wind chill applies to:

- ☐ A. Anything outdoors, including pipes and cars
- ☐ B. People and animals, things with a heat budget
- ☐ C. Only exposed skin, never clothing

5. The heat index assumes shade. Full August sun can add roughly:

- ☐ A. Nothing measurable
- ☐ B. Up to about 15 degrees of effective strain
- ☐ C. Fifty degrees

In your own words

Explain why wind chill matters for a person waiting at a bus stop but not for the metal bench they are sitting on.

Answer key (for the teacher)

1. Why does humidity raise the feels like temperature?

B. Moist air slows sweat evaporation, so your body sheds heat more slowly — The heat index models a body whose main cooling system, evaporation, is being taxed by moist air.

2. Wind chill describes what happening to your body?

B. Wind repeatedly stripping away the thin warm air layer your body builds — The formula models faster heat loss as wind replaces your warmed boundary layer with fresh cold air.

3. Feels like says 105. The thermometer says 90. Which is the real temperature?

B. 90 — The air is 90. The 105 describes the strain on a human body cooling itself in that air; it is physiology, not a second thermometer.

4. Wind chill applies to:

B. People and animals, things with a heat budget — Objects just reach air temperature faster in wind; they cannot drop below it. Wind chill models living heat loss.

5. The heat index assumes shade. Full August sun can add roughly:

B. Up to about 15 degrees of effective strain — The NWS notes direct sunshine can add up to around 15 degrees to how the heat loads a body.
